

(2) the acute infections. He deals with the second group, which he divides into four varieties: (1) Acute infections of the joint, with the formation of pus but no opening into the joint; (2) compound injuries to the joint but no damage to the bone; (3) compound fracture of the femur or tibia involving the joint; (4) cases included in 2 or 3, with general sepsis supervening. In cases of the first variety, active and passive motion to an extent not causing pain, can be used after adequate drainage has been instituted. In only a few cases of the second variety and in no cases of the third and fourth varieties should an attempt be made to secure a movable knee-joint. Ankylosis is the end to be sought, with the knee at an angle of from 10 to 20 degrees. Attempts to secure motion except by late arthroplasty should be discouraged, except in group one.

THERAPEUTICS

UNDER THE COAHOE OF
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Local Serotherapy of Gonococcus Rheumatism.—DEHRÉ and PARAF (*Bull. de la Soc. méd. des. Hôp.*, 1919, xliii, 908) describe in detail 15 cases of acute gonococcus arthritis treated by injections of antigonococcus serum into the affected joints. In 6 cases the cure was complete in less than eight days; in 8 others before the fifteenth day. The joint function returned to normal in a rapid and apparently complete manner. This treatment is limited to the larger joints because of the difficulty of injecting the serum into a small joint. They puncture the joint and inject the serum in place of the effusion. This was repeated every day or every second or third day. In the case of multiple joint affections they were all treated at the same time in the same way.

Harmful Effects of Shallow Breathing, With Special Reference to Pneumonia.—From observations on a number of cases of pneumonia, MEAKINS (*Arch. Int. Med.*, 1920, xxv, 1) concludes that the anoxemia occurring in acute lobar pneumonia is the result of the rapid and shallow breathing typical of this condition. It is well known that the severity of the symptoms in pneumonia is not necessarily dependent on the degree of pulmonary involvement. A much more valuable indication as to prognosis is the respiratory-rate. It has been observed that as the respiratory-rate increases the patient's condition becomes more grave. As a rule, in adults when the respiratory-rate persists above 50 per minute, cyanosis begins to develop. This is a definite sign of pronounced anoxemia. The harmful effect of persistent anoxemia on

the cardiovascular system is well recognized. There is no particular proof that the cyanosis in pneumonia is due to cardiovascular failure, and careful observation leads the author to believe that the cardiovascular collapse is a sequel to the anoxemia. In spite of the gradual increase in the total volume of expired air per minute there is a very conspicuous diminution in the ratio between the respiratory volume and the theoretical dead space until a point may be reached where the alveolar air, expired or inspired, amounts to comparatively few cubic centimeters, being undoubtedly insufficient to carry on any adequate pulmonary ventilation, so that eventually cyanosis develops. The respiratory quotient becomes progressively higher, but when the crisis occurs there is a rapid return to normal not only in regard to the respiratory quotient but also in the respiratory-rate and volume and the total ventilation per minute. Another aspect of the question is the part played by the pulmonary circulation. While it must be assumed that a certain volume of blood passes through the damaged lung area without proper ventilation, we are not justified in supposing that this non-ventilated blood is sufficient in amount to reduce appreciably the oxygen content of the mixed blood entering the left side of the heart. Therefore the author concludes that the anoxemia occurring in pneumonia is the result of the rapid and shallow breathing.

Acute Methyl Alcohol Poisoning Associated with Acidosis.—HARROP and BENEDICT (*Jour. Am. Med. Assn.*, 1920, lxxiv, 26) report a case of severe acute poisoning with methyl alcohol associated with a marked grade of acidosis, in which recovery followed the use of alkali therapy. The acidosis was associated with an increase in the amount of titrable organic acids in the urine and specifically with a marked increase in the excretion of lactic and of formic acids. The authors cite an observation of Bongers, who gave methyl alcohol to dogs by mouth and was able to recover about three times as much methyl alcohol in the combined washings of the second and third days as he was able to obtain in those of the first. This work would appear to clearly indicate the importance of thorough and repeated lavage.

The Basal Metabolism in Exophthalmic Goitre.—This paper by MEANS and AUB (*Arch. Int. Med.*, 1919, xxiv, 645) is based on 345 metabolism observations on 130 patients. These observations bear out the conclusions drawn in their first paper on the subject. In addition, using the basal metabolism as an index of toxicity, they find that: (1) In the majority of cases the results after two or three years are equally good with roentgen-ray treatment as with surgery. (2) After surgery the metabolism shows a rapid preliminary fall, a secondary rise followed by a final fall; with roentgen-ray treatment there is a gradual progressive fall. (3) In securing the same end-result with surgery or with the roentgen ray, a lesser rest factor is necessary with the latter. With the roentgen ray there is practically no mortality; with surgery there is a definite one. (4) Patients treated surgically do better and the risk of operation is less, if they have previously had their thyroid and thymus glands irradiated. (5) The risk of operation

is greater and the need for preoperative roentgen-ray treatment is greater in cases with a very high metabolism and moderate tachycardia than in those with an extreme tachycardia and moderate metabolism elevation. (6) The safest program for the treatment of exophthalmic goitre, as a whole, is the routine irradiation of thyroid and thymus glands, in all cases, with surgery held in reserve for patients who do not then do well. (7) Surgery is contra-indicated with patients whose metabolism is rising in spite of complete rest in bed, and also with patients of the type with moderate tachycardia and great metabolism increase, except when they have previously had thyroid and thymus glands treated by the roentgen ray. (8) Finally, they believe that in the management of exophthalmic goitre, periodic determination of the basal metabolism should be quite as much a routine as is the examination of the urine for sugar in diabetes mellitus. Further, in border-line cases they believe the basal metabolism furnishes very valuable aid in differential diagnosis.

PEDIATRICS

UNDER THE CHARGE OF

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Thymus Study.—PANKE and McCLURE (*Am. Jour. Dis. Children*, November, 1919) have made an exhaustive review of the literature on the thymus gland and also publish the results of their own experiments, comparing the work of their predecessors with their own. Their work was undertaken in the belief that it was possible to produce in animals a rickets almost, if not quite, identical with human rickets by means of the removal of the thymus gland. As regards the former literature it is doubtful whether an unprejudiced person who read for the first time the articles on extirpation of the thymus, could obtain from it any clear conception as to what the effects of removal of the thymus actually are. He would probably be at a loss to know whether to regard the thymus as essential to life or as an organ devoid of function, or at least of function demonstrable by extirpation. Unfortunately the more recent experimental work on thymus function has not brought the problem any nearer solution. Indeed it has been productive of more widely divergent results than the earlier work. Some of the causes of the confused state of our knowledge concerning the effects of the removal of the thymus may be laid to the fact that a large amount of the experimental work connected with extirpation of the thymus has been inadequate. The experiments of the earlier and more recent investigators who have depended for the removal of the thymus on the method originally employed by Friedleben, cannot be accepted as valid for the determination of the function of the thymus, for if extirpation performed by that method is even approximately complete, it cannot possibly be so with any regularity. The experiments of others who employed better operative methods are of little value or actually worthless because of